

CLAIMS

What is claimed is:

1. A signal transmitting member for an integrated circuit package, comprising:  
a central elongated body; and  
at least one flute which extends from the central elongated body.
2. The signal transmitting member of Claim 1, further comprising a cap at one end of the central elongated body.
3. The signal transmitting member of Claim 2, wherein the cap is made of a high dielectric constant material.
4. The signal transmitting member of Claim 2, wherein the cap is made of a conductive material.
5. The signal transmitting member of Claim 4, wherein the cap adheres to a recess on the integrated circuit package through an adhesive melt.
6. The signal transmitting member of Claim 2, wherein the cap is screwed onto the central elongated body.
7. The signal transmitting member of Claim 2, wherein the cap has a generally spherical surface.
8. The signal transmitting member of Claim 2, wherein the cap has a maximum vertical height equal to one third the diameter of a solder ball that would be used to connect the integrated circuit package with a circuit board or substrate.

9. The signal transmitting member of Claim 1, the signal transmitting member being made of a conductive material.
10. The signal transmitting member of Claim 9, wherein the conductive material is one of the group consisting of a beryllium copper alloy, a copper steel alloy, brass, copper, gold, aluminum, gold, nickel, silver, titanium, or tungsten.
11. The signal transmitting member of Claim 1, the signal transmitting member connecting the integrated circuit package and a circuit board or substrate, the signal transmitting member being supported by a support member.
12. The signal transmitting member of Claim 11, the support member being an insulating membrane.
13. The signal transmitting member of Claim 12, the insulating membrane being permanent.
14. The signal transmitting member of Claim 12, the insulating membrane being of a cellulose material which dissolves with heat.
15. The signal transmitting member of Claim 12, the insulating membrane being an organic based plastic which is washed away with water at a certain temperature threshold or with a certain type of detergent.
16. The signal transmitting member of Claim 11, the support member being a stanchion for holding two or more signal transmitting members.
17. The signal transmitting member of Claim 11, the support member being used in an assembly or repair operation.

18. The signal transmitting member of Claim 1, wherein the signal transmitting member is formed by an extrusion process.

19. A support member for holding signal pins between an integrated circuit package and a circuit board or substrate, comprising:

a main body made of an insulating material; and  
holes in the main body for allowing passage of the signal pins.

20. The support member of Claim 19, wherein the major plane of extension of the support member is vertical when placed between the integrated circuit package and the circuit board or substrate.

21. The support member of Claim 20, wherein the major axis of the signal pin is vertical when placed between the integrated circuit package and the circuit board or substrate.

22. The support member of Claim 19, wherein the major plane of extension of the support member is parallel to the major plane of extension of the circuit board or substrate.

23. The support member of Claim 20, wherein the major axis of the signal pin is vertical when placed between the integrated circuit package and the circuit board or substrate.

24. The support member of Claim 19, wherein the insulating material is an organic based plastic which is washed away with water at a certain temperature threshold or with a detergent.

25. The support member of Claim 19, wherein the insulating material is a cellulose material which dissolves with heat.

26. The support member of Claim 19, wherein the insulating material is a permanent material.

27. A circuit structure, comprising, in the following order:  
an integrated circuit package;  
at least one signal pin; and  
a circuit board or substrate, the signal pin being supported by a support member or the signal pin being fluted.
28. The circuit structure of Claim 27, wherein the support member is a two or more pin stanchion, the stanchion being a vertically oriented member of insulating material which has holes allowing the passage of the signal pins.
29. The circuit structure of Claim 28, wherein the support member is placed only at the corners of the integrated circuit package.
30. The circuit structure of Claim 28, wherein the support member entirely encloses an area.
31. The circuit structure of Claim 30, wherein there are signal pins which are unsupported by a stanchion in the area enclosed by the support member.
32. The circuit structure of Claim 27, wherein the support member is a layer of insulating material oriented parallel to the plane of major extension of the circuit board, the support member having holes for allowing the passage of the signal pins.
33. The circuit structure of Claim 32, wherein the support member forms a permanent part of the circuit structure.
34. The circuit structure of Claim 32, wherein the support member either dissolves with the application of heat or is washed away with water.

35. The circuit structure of Claim 27, wherein the signal pin is cylindrical and is non-fluted.
36. The circuit structure of Claim 27, wherein the signal pin is fluted.

37. A signal transmitting pin between an integrated circuit package and a circuit board substrate, comprising:

the signal transmitting pin being shaped so as to present an increase in surface area over a purely cylindrical or tapered cylindrical shape so as to minimize inductive and capacitive effects at high frequency operation.